(No Model.)

C. L. WAGANDT.

DIE FOR SEAMING SHEET METAL VESSELS.

No. 547,974. Patented Oct. 15, 1895.

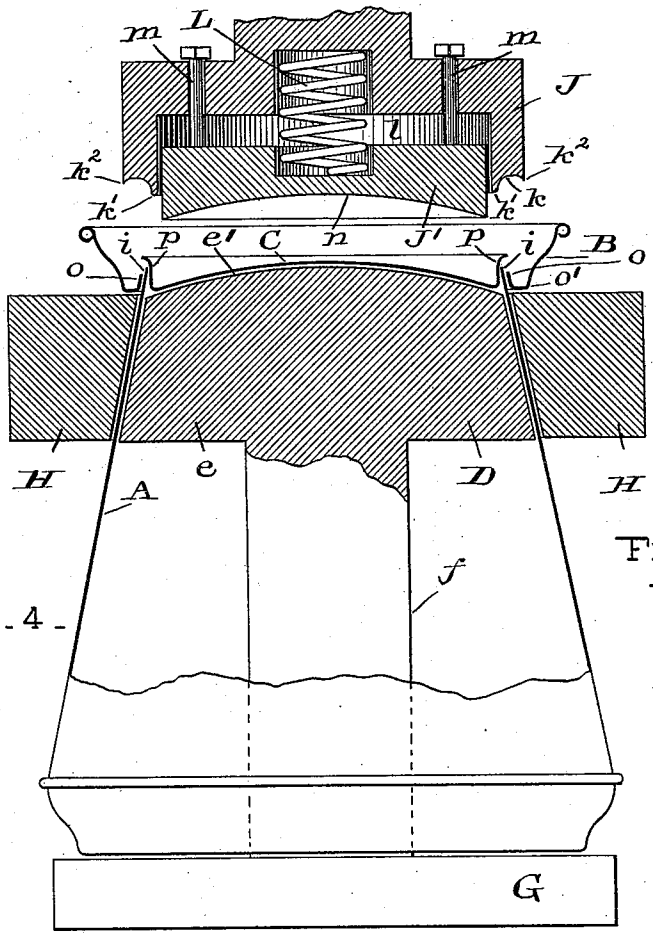


Fig. 1.

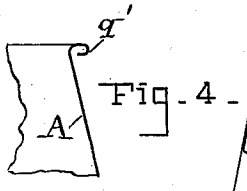


Fig. 4.



Fig. 5

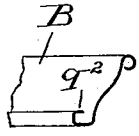
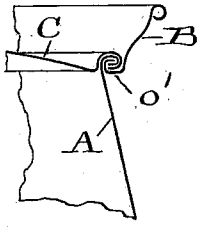


Fig. 6.

Fig. 3.



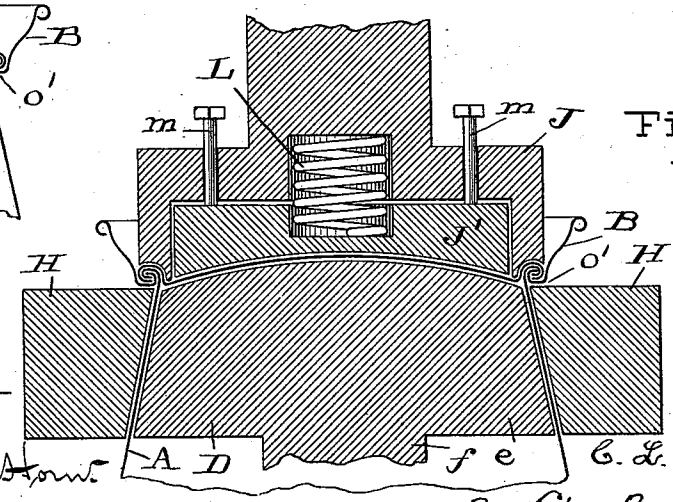


Fig. 2.

WITNESSES :-

L. J. VanHorn

Charles B. Mann Jr.

INVENTOR :-

C. L. Wagandt

By Chas B. Mann

ATTORNEY.

ANDREW B. GRAHAM, PHOTO-LITHO. WASHINGTON, D.C.

UNITED STATES PATENT OFFICE.

CHARLES L. WAGANDT, OF BALTIMORE, MARYLAND.

DIE FOR SEAMING SHEET-METAL VESSELS.

SPECIFICATION forming part of Letters Patent No. 547,974, dated October 15, 1895.

Application filed June 6, 1895. Serial No. 551,821. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. WAGANDT, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Dies for Seaming Sheet-Metal Vessels, of which the following is a specification.

My invention relates to improvements in dies for the manufacture of sheet-metal vessels—such as chamber-pails, coal-hods, and the like—and the object is to provide a die to form an improved construction of joint to unite the body, the foot, and the bottom of such vessels, as hereinafter described.

In the drawings which illustrate my invention, Figure 1 shows a central vertical section of the die parts in their open condition and a part section of the body, foot, and bottom of the vessel. Fig. 2 shows the same parts seen in Fig. 1, but with the die parts closed. Fig. 3 is a broken sectional view of the several parts of the vessel united, showing the joint. Figs. 4, 5, and 6 are detail views of the vessel parts, showing the hooked flanges as they are in the finished joint.

Referring to the drawings, the letter A designates the tapered body portion of the vessel, B the annular flaring foot, and C the bottom, all united by one seam or joint. My improvement relates to a die for forming this joint.

The die consists of a die-block D, of tapered form, corresponding to the interior configuration of the vessel-body to be operated upon, the cross portion *e* thereof fitting within the body of the vessel and the vertical stem *f* supported upon a suitable base G. An outer clamping-die H surrounds the vessel-body A and conforms to the exterior configuration thereof and clamps the body against the inner die-block in operating this die. The body of the vessel has inverted position, and the lower edge *i* thereof projects above the die-block and clamp H, which latter in practice is made in two separable pieces jointed together, so as to open and close. The seam-forming die, acting in conjunction with the parts just described, comprises two members, a die J, having a circumferential coiling groove *k*, whose inner rim edge *k'* projects down below its outer rim edge k^2, and a central socket *l*, and a bottom presser J', occupying said socket. This presser is supported in position by vertical bolts *m*, movable loosely through the die, and a spiral spring L, interposed between the die and presser, keeps the latter normally pressed down, while allowing it to yield back when the die makes its final traverse. The presser J' has a concaved face *n* to fit on the bottom C and hold it against the convex top *e'* of the die-block D.

The body A of the vessel here shown is of the ordinary tapered form usually employed in constructing coal-hods and chamber-pails. The annular foot B is flaring and has a shoulder *o'* and a down-bent flange *o*, and the bottom C, of concavo-convex form, has an outturned flange *p* of greater depth than either the edge *i* of the body or flange *o* of the flaring foot.

When the three parts of the vessel are assembled to form the connecting-joint, the body A in inverted position is slipped down over the die-block D, and the outer clamp H is fitted around the vessel-body and clamps it in position, with the lower edge *i* of said body projecting a sufficient distance above said die-block and clamp, as before described. The flaring foot B is next placed in inverted position on the upper surface of the clamp H, so that its down-bent flange *o* surrounds exteriorly while terminating short of the edge *i* of the body. This flange is parallel with the tapered wall of the body. Finally, the bottom C is inserted within the inverted lower end of the body A, with its concaved side resting upon the convex top *e'* of the die-block D and with its outturned flange *p* projecting over the edge *i* of the body and down-bent flange *o* of the foot. The edge *i* of the body thus lies between the flanges *o* and *p* of the foot and bottom. With the parts thus arranged the seam-forming die J J' is forced downward, its preliminary traverse bringing the concaved face *n* of the presser J' down upon the central surface of the bottom C and holding the same firmly against the top *e'* of the die-block D. The die J on its further traverse will bring the inner rim edge *k'* of its coiling groove *k* into contact with the flange *p* of the vessel-bottom, and said flange and also the edge *i* of the vessel-body will be expanded outwardly and parallel with each other toward the rim

edge k^2 of the die and beyond the line of the tapered body wall, and then both edges are turned inward, and each forms a coiled hook q q', taking around the outward-pointing coiled hook q^2 of the foot, and said die presses said coiled hook q q' into interlocking engagement with the said hook q^2, and this results in the formation of a coiled joint or seam lying on a line exterior of the plane of the wall of the body A or between said line and the flaring wall of the foot B. By this action of forming the seam by expanding the metal of the parts by outwardly coiling them instead of contracting them the metal offers less resistance, and consequently the operation is conducted with greater ease and facility and with less liability of fracturing the metal.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a die for forming the bottom seams of sheet metal vessels, the combination of an interior die block to support the vessel body; a clamp to surround the vessel body and press it against the said die block; a die having a socket or recess and a coiling groove, k, having an inner rim-edge, k', projecting down below the outer rim-edge, k^2, to expand the flanges of the joints and form a coiled seam; a presser movable vertically in the said recess of the die and serving to hold the vessel-bottom against the interior die block; and a tension spring between the said die and presser, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

CHARLES L. WAGANDT.

Witnesses:
GEO. E. TAYLOR,
EDGAR F. DOBSON.